

The Commonwealth of Massachusetts

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ANNUAL REPORT

OF THE

Mass. State Planning Board

NOVEMBER 30, 1938



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# The Commonwealth of Massachusetts

## STATE PLANNING BOARD

Room 24, State House, Boston, November 30, 1938

*To the Honorable Senate and House of Representatives  
In General Court Assembled:*

The Massachusetts State Planning Board herewith submits its annual report for the year ending November 30, 1938. The act under which the Board came into existence, chapter 475 of the Acts of 1935, is comprehensive in its scope. It imposes on the Board a wide range of duties. Perhaps its objective may be briefly summarized by saying that it directs the Board to take an over-all view of the physical resources and possibilities of the State and to prepare plans for their most advantageous use.

The Legislature of 1936, through the enactment of chapter 278 of the Acts of that year, saw fit to extend the powers and duties conferred by chapter 475, by constituting the Board the Interstate Compact Commission for Massachusetts to negotiate with the other New England States, the State of New York and the Federal Government to regulate matters relating to the development and improvement of any or all natural waterways within the several states, including the elimination of pollution from such waterways and the carrying out of public works projects on the banks thereof and adjacent areas. The Board has operated under the authority conferred by these two acts.

Under the authority of chapter 278 of 1936, plans were formulated for the control of floods by means of a reservoir construction program. Inasmuch as the flood situation constituted an emergency on which action was urgent, the major portion of the Board's efforts in 1937 were directed toward a solution of this problem. The Interstate Compacts, fully discussed in the report of that year, were the result of those efforts. These compacts failed of ratification by Congress during 1937, and the year 1938 saw the renewal of the Board's activities to secure either the ratification or a compromise method of procedure under which effective flood control would be insured to the citizens of Massachusetts. These activities are discussed in detail later in this report.

During 1938 the Board continued its collection and analysis of data for the formulation of plans for the other phases of its program.

Two changes have been made in the membership of the Board during the year, as follows:

Frank W. Howard, appointed October 13, 1938—qualified October 13, 1938 for the six-year term ending October 13, 1944—succeeding William Stanley Parker.

Vincent P. Coyne, appointed October 19, 1938—qualified October 19, 1938 to fill the unexpired term of William Trufant Foster, expiring September 18, 1942.

A word of appreciation is due the outgoing members of the Board upon their retirement from this public service. Both Mr. Parker and Mr. Foster have served on the Board since its establishment in 1935 and have given unsparingly of their time at regular meetings, at committee meetings and at conferences to further the interests of the Board.

The Committee on Public Works, of which Mr. Parker was Chairman and Mr. Foster a member, has evolved a program which has attracted nation-wide attention. This program is discussed in the Public Works section of this report. The Board during 1938 voted to present legislation to the incoming Legislature to implement this policy, Mr. Parker agreeing, as a measure of cooperation, to work with the Board in its endeavor to secure the passage of this legislation. Mr. Parker has contributed an exposition of this policy to the "American City" magazine and eminent authorities throughout the country have been interviewed both personally and by correspondence. The "American City" article, in addition to its publication in an organ of wide circulation, has been generally distributed to economists and authorities on public works programming. Nothing which it was felt would aid in the formulation of a really sound policy has been left undone.



The permanent staff of the Board has been unchanged during the year. Temporary technical assistants have been engaged from time to time for special or consulting services.

The budget for the year 1938 totaled \$44,000, divided as follows:

Personal services.....	\$33,000
Miscellaneous expense.....	11,000

The National Resources Committee has continued to furnish to the Board the services of a Consultant for comprehensive planning studies, Arthur C. Comey, and an Associate Consultant for land use studies, David I. Rozman.

The activities of the Board have been conducted in accordance with the topical outline prepared when the Board was organized and a report is herein presented on the studies made in connection with the individual phases of this program.

This topical outline includes:

- A. Long Term Master Plan Coordinating Resources
  - 1. Land: Agriculture, Forestry, Geologic Resources, Urban Use, etc.
  - 2. Water: Supply, Flow, Sanitation, etc.
  - 3. Power: Production, Distribution and Use
  - 4. Industry: Trade and Social Conditions
  - 5. Recreation: Extensive and Intensive, Scenery, Wild-life, etc.
  - 6. Transport: Highway, Rail, Air and Water Coordinated
- B. Public Works: Ten-year State Program and Budget, Federal aid, etc.
- C. Community Planning: Encouragement and Advice

## LAND

In considering the general pattern of land utilization in Massachusetts, it is essential at the very outset to take into consideration the great complexity and interdependence of different types of land uses. Unlike the conditions prevailing in some other states, especially in the west, in Massachusetts there are very few areas which may be designated as distinctly rural. More than in other sections of the country the rural environment in Massachusetts includes many other occupations besides farming, and many other uses of land than those devoted to agricultural cultivation. The cities and the large industrial population here exert a strong influence on the manner in which rural areas in Massachusetts are being utilized. With the growth of urban population, the number of various demands on rural areas has been constantly on the increase. One of the most important facilities which the rural areas have been called upon to provide for the city population is concerned with recreational developments.

Public parks and other recreational areas had to be provided for large masses of people trying to find an escape to open spaces from the overcrowded conditions of the cities. In some sections distinguished by their scenery and natural beauty, or in the vicinity of the lakes, ponds and rivers, a considerable amount of land was taken up for such recreational developments as country estates, summer homes, or camps. Much land is being utilized also for diverse winter and summer sports as skiing, snowshoeing, hiking, hunting and fishing.

Likewise, with the growth of large cities and the concentration of population, it became necessary to keep a greater amount of land for present or prospective water supply reservoirs. The Boston Metropolitan water supply system reaches far into the western part of the State, keeping a large acreage of land in rural areas.

With the advent of good roads and modern automobile transportation another important development took place as a factor in establishing the closest relationship between city and country. A good many city people preferred to establish their residences in a rural environment, commuting to the places of their work, often over considerable distances. These people, by choosing the country for their homes, in many instances found it possible to do a little farming largely with a view of supplying at least a part of the food requirements of their families. Part-time farming thus gained considerable ground and became an important link between the city and the country.

While these new developments, born of the requirements and demands of rapidly growing city population, were invading the rural countryside and claiming con-



siderable areas of land, the agriculture of Massachusetts was undergoing a transformation during the last 50 or 60 years. In 1880 about two-thirds of the total area of the State was included in farming, as compared with the present area of only 43 per cent; or in other words, more than 1,200,000 acres of land, representing almost 25 per cent of the total area of the Commonwealth, went out of agricultural use. The land released from agricultural use in some cases was taken up for the already mentioned new developments—recreational, residential, part-time farming and industrial. The demand for new uses, however, did not keep up with the rate of abandonment from agriculture. In many towns land formerly in agriculture is represented by idle acres scattered all over the State and left to grow in inferior kinds of wood. If properly attended, this forest land may become a great asset to the State and to the individual communities. As in the past, it should provide a sufficient amount of timber for the support of local wood-using industries, and it should also provide subsidiary employment for the local agricultural population. Under proper planning this land should, therefore, be devoted to systematic and scientific development of forest growth. The program of land use planning as developed by the State Planning Board recognizes the importance of proper development of forestry areas in the general scheme of conservation of natural resources in Massachusetts.

The decline in land areas in agricultural development resulted also in the decline of the agricultural population and created difficulties in the support of social institutions in many rural communities. At the present time we find that about 110 towns in the State have a smaller population than they had in 1880, in spite of the fact that the total population in Massachusetts has more than doubled during the same period. About 90 towns predominantly rural in character have less than 25 per cent of their area in farming, with most of the remaining area neglected and allowed to remain idle without any productive return either to their respective communities or to their immediate owners. Meanwhile, the area of the towns which is still occupied by the farming population has to pay a higher rate of taxation to support the entire town, including these idle acres. In some cases a large mileage of roads has to be supported at great expense in order to accommodate a few settlers living in widely scattered areas. Likewise, the children have to be transported to school, and the schools themselves have to be maintained at a very high cost per child. The towns which are comparatively better off due to the presence of diversified sources of taxation in general can meet the expenditures which are involved in the high cost of servicing the isolated settlements and scattered population. Many of the towns, however, even with the greater assistance from the State Treasury, are finding themselves in a difficult financial position which in the course of time is likely to get worse unless something constructive is done to eliminate the fundamental maladjustments. With proper understanding of local problems and by planning for more adequate utilization of natural resources, a considerable improvement may be brought about. On the other hand, a thorough study and consideration of local problems indicate that many towns will have to cease their existence as independent political units with the land either diverted to public ownership or merged with other communities.

Any kind of planning to be sound will have to be based on a thorough knowledge of fundamental factors involved in the case. Land planning in Massachusetts, because of the complexity and intricate relationship of conflicting land uses, requires for its background the most detailed knowledge of facts pertinent to the conditions existing in various local communities.

Realizing the importance of such information the State Planning Board as its first step in approaching land use planning in the State organized and carried out a complete land use survey through the entire Commonwealth. The results of this study are being presented for each town on five separate maps, drawn to the scale of two inches to the mile. The first three maps indicate the physical background as far as soil, topography and water resources are concerned, with types of soil classified in several groups on the basis of productivity and adaptability for agriculture. On a separate map are shown the existing land use and cover for individual tracts of land, indicating areas devoted to various agricultural uses, types of forests, and recreational uses, as well as industrial, commercial and residential uses.



The next important information obtained in the field survey and presented on a separate map for each town indicates the exact location of roads and buildings by their type and condition, differentiating between various types of farms, part-time farms, residential, commercial and industrial buildings, schools, hospitals, churches, and other types of private and public developments.

By correlating and analyzing the basic factors presented on these maps and interpreting them in conjunction with available statistics for the town pertaining to major social and economic factors, it is possible to outline the most desirable developments in land utilization for individual towns. In working out a balanced program of land utilization in a State like Massachusetts it is necessary to a certain extent to develop a somewhat different approach and possibly a new technique. Most of the land planning done in the past has been either in urban communities or in the rural areas from the standpoint of agricultural land uses. Very little has been done anywhere so far in integrating these two sets of conditions and visualizing the problem as one into which many different influences and situations enter as determining factors. Because of the complexity of land utilization and the interrelationship of the heterogeneous factors affecting its pattern in the State, a broader point of view is of primary importance.

The means and agencies whereby the land use program in connection with the activities of the State Planning Board will be put into actual operation depend on the nature of the problem and the extent of the necessary changes. In some cases the mere existence of systematically developed information, as provided by the land use survey of the State Planning Board, will bring about more desirable land use developments. This will take place, for instance, when county and State extension workers, the State Department of Agriculture, the Massachusetts Development and Industrial Commission, chambers of commerce, and other public and semi-public institutions, as well as private organizations, are able, by means of available information, to direct agricultural land settlement in a more adequate way, and to indicate the most desirable locations for residential, industrial, commercial and other land uses. This procedure, slow as it is, over a period of time, may attain the desired objectives and be fully effective in bringing about a balanced program of land utilization.

In many cases, however, in order to obtain the desired end of adequate land utilization it will be necessary to apply more direct action, undertaken by the State or local public authorities. Of the various measures at the disposal of public authorities for direct action in putting to practical application the developed programs of planning, the two most important are zoning, and public purchase and ownership. Often, to be fully effective one has to be supplemented by the other.

As far as zoning is concerned, it has become already a well-known and frequently applied tool at the hands of the city planner. In the rural areas zoning, as a means of accomplishment of a land utilization program, is only in its preliminary stages. The first essentially rural zoning ordinance in the United States was enacted in 1933 in Oneida County, Wisconsin. Since then a few attempts have been made on a limited scale in several other states. As far as urban zoning is concerned, Massachusetts has always been in the vanguard of the other states in the country. In the matter of rural zoning this State is not likely to assume the same position. The fundamentals for this are lacking, and the handicaps for a wide application of zoning regulations in rural areas are many.

In essence, zoning is based on a more or less rigid classification of land areas in association with definite uses. Because of variety of soil and topographic conditions even over very small areas it is very difficult to make general restrictive assignments for particular tracts of land. Again, the poor condition of the soil does not necessarily indicate that the site has to be zoned out of agricultural use. Some types of agriculture in Massachusetts, like poultry raising, do not depend very much on the fertile quality in soil; also the situation in regard to the market may be of such preponderant value that physical characteristics of the land may often be sufficiently counter-balanced. All this indicates that the task of zoning will be difficult, but by no means impossible. In fact, the basic information supplied by the Massachusetts State Planning Board through its land use survey, is likely to promote the realization of land use control through zoning wherever the local



authorities are wide awake to their problems and are willing to give a thorough consideration to the matter. At the beginning, rural zoning in Massachusetts is likely to be of a limited nature, confining regulations to a particular type of land use or preventing the spread of isolated settlement.

The other important tool of direct control of land use is through public purchase and control. In applying this means the State of Massachusetts has been one of the leaders in the country. The purchase of rural land for the development of forests and also for providing recreational facilities and wild-life reservations has been going on for a number of years. At the present time the State Department of Conservation has under its ownership and control about 200,000 acres of land in 55 state forests, a number of parks and State reservations. The Legislature of Massachusetts within recent years passed an act outlining further purchase for the same purposes of about 500,000 acres of land.

The State purchase and ownership of land has been in the past and will continue for some time to be the most important means in controlling the use of land in Massachusetts, even though considerable gains are made in other methods of bringing about a balanced program of land utilization. As a matter of fact, the public purchase of land in correcting maladjustments in land use in order to be fully effective is to be supplemented by regulatory measures undertaken by local communities.

In purchasing areas for State ownership, ordinarily the type of land selected is that not suitable primarily for agriculture and not having any great possibilities for other land uses. Also, the sites of land are being purchased which have recreational possibilities or any other public value giving the promise of greatest use for the people under public ownership and control. Since at the present time the most active factor in developing a land use program is concerned with public ownership and control under the State Department of Conservation, the State Planning Board, in addition to its general promotion of the development of a land utilization program through various local public agencies and State institutions, is directing its primary attention to analyzing individual land areas most suitable for public acquisition and control. In working out this problem the Board has adopted the principle of the desirability of developing forestry areas for the State on the basis of watershed units where the control of the land gives greatest promise also for recreational and wild-life development.

With this goal in mind under the procedure adopted by the State Planning Board, the individual watersheds are first of all investigated from the standpoint of their physical characteristics, including a detailed and complete picture of soil, topography, water resources, wild-life refuges and recreational advantages. A complete picture is also taken of the existing land uses with a detailed indication of existing forestry developments as to the species of trees and their distribution by size and age. On separate maps are plotted all the existing roads and buildings in the area by their type and the present condition of use. From the assessors' records and existing information, data are obtained on the valuation of land and the buildings and other improvements.

In general, the State Planning Board bases its activities in the realm of land utilization on the fact that the forestry areas give the greatest promise of attaining the most effective improvement in land utilization at the present time. From the standpoint of area, the forestry land under private and public control occupies about 60 per cent of the total area of the Commonwealth. If some gain is made in putting this land on a better productive basis, a great deal will be accomplished in the field of conservation of natural resources of Massachusetts and in eliminating some of the land use maladjustments existing in the rural areas.

From the information already assembled maps have been prepared on a scale of 2" = 1 mile, showing:

*Land Utilization*, indicating the existing land use and cover for individual tracts of land indicating areas devoted to various agricultural uses, types of forests and recreational uses as well as industrial, commercial and residential uses

*Roads and Buildings*, indicating the exact location of roads and buildings by their type and condition; also differences between various types of farms and part-time farms, residential, commercial and industrial buildings; schools,



hospitals and churches, and other types of private, public and semi-public developments such as parks, playgrounds, golf courses, aviation fields, cemeteries and water supply reservoirs

*Soil Classification*, indicating the character of soil classified in several groups on the basis of productivity and adaptability for agriculture

*Topography*, indicating the topography of each town by means of contours at 20 ft. intervals

*Roads and Waterways*, indicating the location and names of roads and waterways

Each set of maps is accompanied by a symbol sheet, and also by a statement interpreting conditions and indicating certain general conclusions. These maps are available for distribution at a price designed to cover approximately the cost of reproduction. To date the basic data and maps for a total of 101 towns of the Commonwealth have been released for public distribution. These towns include:

Abington	Hampden	Oxford
Acton	Hanover	Paxton
Alford	Hanson	Pembroke
Auburn	Hardwick	Peru
Berlin	Hawley	Plympton
Billerica	Heath	Richmond
Blackstone	Hingham	Rockland
Bolton	Hinsdale	Rowe
Boylston	Holland	Russell
Bridgewater	Hopedale	Salisbury
Burlington	Hull	Shelburne
Chelmsford	Huntington	Shrewsbury
Chester	Kingston	South Hadley
Chesterfield	Lancaster	Southboro
Chicopee	Leicester	Southbridge
Clarksburg	Lexington	Stockbridge
Colrain	Lincoln	Sutton
Dalton	Lunenburg	Tewksbury
Douglas	Lynnfield	Tolland
Dracut	Mendon	Topsfield
Dudley	Merrimac	Tyngsboro
Duxbury	Milford	Tyringham
E. Bridgewater	Millbury	Upton
E. Brookfield	Millville	Uxbridge
E. Longmeadow	Monroe	Wales
Egremont	Montgomery	W. Boylston
Essex	Mt. Washington	W. Bridgewater
Georgetown	New Ashford	W. Newbury
Gill	Newburyport	Westboro
Goshen	N. Brookfield	Westford
Grafton	Northboro	Westhampton
Groveland	Northbridge	Weston
Halifax	Norwell	Whitman
	Wilbraham	Wilmington

A number of public and private organizations are already making an extensive use of the published information, attesting to the fact that this line of activity of the State Planning Board is contributing effectively toward a balanced system and an orderly development of natural resources in the Commonwealth.

In May 1938 a communication was directed, by the Chairman of the National Resources Committee, to the State Planning Boards of the country. This communication suggested that each State Planning Board set up a sub-committee to be known as the Land Planning Committee with representatives of Federal, State and local interests to facilitate cooperation among local, State and Federal agencies in state land planning studies. This matter was given due consideration by the Board.



It developed that a similar committee was in the process of formation by direction of the Secretary of Agriculture. It was felt that the best results might be secured with less duplication through cooperation. There was accordingly established under the chairmanship of the Director of the Extension Service an organization known as the Massachusetts Rural Policy Committee composed of representatives of each agency that could be of service in the development of an agricultural land use program, or could benefit by the information collected, together with representatives from county committees and State-wide farm organizations.

The objectives of the Committee are declared to be:

1. To appraise and coordinate all public rural programs and adapt them to local conditions
2. To enhance education and develop agricultural leadership
3. To strengthen the cooperative relationships in research, surveying, and other fact-finding so as to provide more reliable and coordinated basic data for teaching, planning, and for use in the application of action programs

Specifically, it is the intention to form in as many towns as possible, under Extension leadership, committees who will analyze the agricultural land use maps prepared by the State Planning Board for each town and make recommendations on the basis of such maps for each land use area within the town. It is proposed that each town committee so established shall include a representative of the local planning board.

The Chairman of the State Planning Board is a member of the Executive Board of the Massachusetts Rural Policy Committee and has participated in the various meetings and discussions.

## WATER

Substantial progress has been made during 1938 on the study of the water resources of the Commonwealth. The principal field work has been carried on through a W.P.A. Water Resources Project supervised by the State Planning Board staff. This project has been set up on a State-wide basis with field offices in Boston, Lynn, Taunton, Worcester and Springfield. Investigations of the various watersheds of the State have been carried on including the Hoosic, Housatonic, Connecticut and its tributaries,—the Deerfield, Millers, Westfield, Farmington, and Chicopee,—the Nashua, French, Quinebaug, Blackstone, Concord, Merrimack, Parker, Ipswich, Mystic, Charles, Weymouth, Taunton and the remaining coastal rivers. Several of the studies are already completed and substantial progress has been made on the study of nearly all the rest, although certain changes in W.P.A. regulations and the necessity of rewriting and renewing projects every six months have caused numerous temporary interruptions. Likewise, a scarcity of adequate technical help has necessitated substantial changes in the technical outline. Despite these difficulties the studies have forged steadily ahead and when completed will, for the first time, present to the people of the Commonwealth a complete picture of the various problems connected with the water resources of the State.

From the outline followed in conducting these studies, it may be seen that it is sufficiently broad in scope to present a thorough picture of existing conditions, from which may be developed a balanced program of water use in each watershed area.

Through the courtesy of the W.P.A. Geodetic Survey, arrangements have been made for the printing of these reports by a staff operating under the sponsorship of the Public Works Department. In the early part of the year Drainage Basin Study No. 1—The Blackstone River, prefaced by an Introduction to Drainage Basin Studies was printed and released for distribution, receiving much favorable comment. Late in the summer the printing of the Farmington River Report, Drainage Basin Study No. 3, was completed. Distribution of this, however, has been withheld until the issuing of the Connecticut River Report, Drainage Basin Study No. 2. This is now in the hands of the printer and will be ready for distribution about the first of the year. Likewise, the Deerfield River Basin and the Millers River Basin studies are completed and awaiting publication. The West-



field and Chicopee reports are also completed, but are waiting for supplementary information on the 1938 flood. Following the program after the first of the year, the objective will be the completion of the Housatonic, Nashua, French and Quinebaug reports. Subsequently, the efforts of the staff will be concentrated on the various coastal streams, for which much field work is already completed.

The technical outline followed has been exceptionally broad in scope. Its principal divisions are:

- (a) General analysis of the watershed including a description of physical, social and economic conditions, their present status and possibilities for future developments;
- (b) Detailed study of the various elements of water use,—flood control, low water control, power development, water supply, both municipal and industrial, pollution and waste disposal, irrigation, drainage, inland water recreation and wild-life.

Special emphasis of course has been placed on the interrelationship between the various water resources problems such as the connection between flood control and waste disposal, recreation and hydroelectric power. Although the general program as outlined above has been comprehensive in scope, considerable emphasis has been placed upon the urgent and vital necessity of immediate flood control.

In carrying out these studies, the staff gratefully acknowledges the help of the Army Engineers who have already made detailed flood control studies in both the Merrimack and Connecticut valleys; the Massachusetts Health Department in connection with water supply and sanitary problems; the United States Geological Survey; the Weather Bureau for basic hydrologic information; and that of numerous other agencies without the cooperation of which these studies would have been extremely difficult. As previously mentioned, the studies completed to date have been the Blackstone, Connecticut main stream, and Farmington.

Following is a brief summary of the general conditions found in these watersheds:

#### *Blackstone River Basin*

The Blackstone River Basin has an area of 232 square miles and a population of approximately 255,000. Its general slope is toward the southeast, with elevations varying from 1,360 feet near Worcester to about 100 feet in the level cultivated lowlands in the southern portion of the basin. This region greatly enhanced by excellent water power sites was virtually the cradle of American industry.

The flood of 1936 caused direct losses of upwards of \$1,600,000 or approximately \$6.40 per capita. The majority of the damage was done to stock and power equipment. The outstanding cause in this case was negligence in allowing a heavy accumulation of refuse and waste material along the riverbank causing serious encroachment and bottling up of the channel, thus making the passage of flood waters almost impossible. Encroachment on the channel and the dumping of refuse into the river should cease. Consideration should be given to the use of zoning as a means of restricting the occupation of areas near the river subject to periodic inundation. Worcester, the largest city in the valley, suffered a flood loss of about \$700,000 or about 43 per cent of the total damage. There are no economical sites available for the construction of detention basins above Worcester, so that the problem necessitates local control measures such as conduit construction to bypass high creek flows and other allied methods which have little or no benefit to downstream municipalities. The construction of detention basins is not economically justified on the basis of flood control alone.

The Blackstone River is one of the most completely developed streams in the world, with practically all the potential power on either the main stream or the tributaries used at one time or another. The few undeveloped power sites which remain are of negligible importance.

Public water supply conditions, with the exception of Blackstone, Sutton, Upton, Mendon, and Millville are generally satisfactory. However, industrial water supplies originally taken from the river have been greatly jeopardized by the heavy pollution which has forced some of the industries to seek new supplies elsewhere. Sanitary conditions are distinctly unsatisfactory due to heavy pollution from both domestic and industrial wastes, further aggravated by the promiscuous disposal of



refuse and rubbish along the banks. These conditions can and should be improved. Industrial wastes, however, should be handled as a separate problem if river pollution is to be reduced without placing undue restrictions on the industrial development of the valley.

There are no problems of irrigation or drainage. Any program for comprehensive water resources development of the Blackstone River Basin should recognize that the river is essentially an industrial stream and however desirable its recreational possibilities they should be subordinate to the industrial demands. In fact, recreational development should be confined to tributary streams and ponds, State forests and park areas.

#### *Connecticut River Basin in Massachusetts*

Studies for the Connecticut River and its tributaries in Massachusetts are presented in six separate parts; namely, the Connecticut main stream, Millers, Deerfield, Chicopee, Westfield and Farmington. In studying the Connecticut Valley several interstate and intertributary problems of flood control, power and pollution have arisen. It has therefore been found necessary to precede the individual tributary studies by a general introductory discussion of the Connecticut Basin as a whole. Although interstate problems pertaining to a number of phases of water resources exist, the paramount problem confronting the entire watershed is that of flood control and its related problems, the most controversial of which is the development of hydroelectric power. An interstate problem of water supply developed between Massachusetts and Connecticut regarding the protection of the Hartford supply taken from the Farmington Basin. Interstate problems of pollution also exist between these two states.

The interstate aspects of flood control were emphasized by the 1927 and 1936 floods. The 1927 flood caused a total loss of about \$15,600,000 as follows: Vermont \$11,000,000; New Hampshire \$1,800,000; Massachusetts \$2,200,000; Connecticut \$600,000. The flood of 1936 was far more severe, with total damages amounting to upwards of \$35,000,000 as follows: Vermont \$2,000,000; New Hampshire \$2,500,000; Massachusetts \$19,000,000; Connecticut \$11,500,000. If indirect damages and property depreciation are also included, the 1936 damages were upwards of \$135,000,000.

The 1938 flood caused extremely heavy damage on the tributaries, in some instances even greater than that sustained in the 1936 flood. Fortunately, because of its short duration, the main stream was not seriously affected. The repeated occurrence of heavy losses during the last ten years has aroused public opinion to such a degree that flood control is a paramount issue in all four states drained by the Connecticut River. Prior to the flood of March 1936 the Army Engineers made a flood control study outlining a tentative plan calling for the construction of thirty-three reservoirs costing about \$41,000,000 and recommending ten reservoirs costing about \$13,500,000 for immediate construction.

The Omnibus Flood Control Act of June 22, 1936 authorized construction of ten reservoirs in Vermont and New Hampshire in accordance with the original study by the Army Engineers, and with a later amendment permitted sites in Massachusetts to be used. Shortly after the flood of 1936 the Massachusetts State Planning Board was authorized to act as Interstate Compact Commission for Massachusetts in the formulation of flood control compacts with the other New England States, the State of New York, or any one of the authorities named. In November 1937 a final report was submitted by the Army Engineers, House No. 455, 75th Congress, Second Session outlining a comprehensive plan of twenty reservoirs, together with provision for dikes for the protection of Springfield, West Springfield, Chicopee, Holyoke and Northampton, with the recommendation that the diking program be carried out immediately. This plan included the reservoirs selected from the original study by the Interstate Compact Commissions of New Hampshire, Vermont, Connecticut and Massachusetts and proposed by them in their compacts.

This plan if carried out would have had substantial effect on not only the tributaries on which the individual reservoirs were built but on the main stream, reducing the stage of a flood the magnitude of the 1936 about 7½ feet. However, the adoption by Congress of the amended flood control bill on June 28, 1938



authorized the Federal Government to bear the entire cost of flood control dams and to assume title to the lands on which they are constructed, placing the disposal of any power rights under the jurisdiction of the Federal Power Commission. The passage of this bill apparently supersedes the Interstate Compacts under which the states were to provide the reservoir sites and retain control of the power rights. The comprehensive flood control plan makes provision for the consideration of multiple-use reservoirs at several sites for the development of power, recreation or conservation storage. However, in so far as these affect the initial plans, multiple uses are of secondary importance. The emphasis is primarily on flood control, the reservoirs merely being designed for possible further development so as not to preclude other uses which might be found desirable in the future.

It should be re-emphasized that flood control is of paramount importance in the Connecticut Valley. The 1927 flood and the great flood of 1936 together with the severe tributary floods of 1938 have demonstrated beyond question that the flood hazards are far more serious than formerly considered. Flood control in the valley can be justified on the basis of flood protection alone, when it is considered that not only direct but indirect damages and property depreciation are real losses and, as previously stated, totalled upwards of \$135,000,000 for the entire Connecticut Valley in Massachusetts for the single flood of 1936.

The problem of undeveloped power in the Massachusetts portion of the Connecticut watershed including the tributaries is not of great importance since nearly all the large sites possible of economical development have been utilized. Installed power in the Massachusetts portion of the watershed is divided approximately as follows: Millers, 8,000 horsepower; Deerfield, 66,000; Chicopee, 48,000; Westfield, 58,000; and the main stream, 145,000 horsepower. The potential power, much of which is impossible of economical development, is divided as follows: Deerfield, 45,000 horsepower; Westfield, 30,000; Millers, 16,000; and Chicopee, 4,000 horsepower.

Water supply problems in the basin are relatively unimportant, most of the cities having adequate supplies of good water and only a few of the smaller municipalities being in need of additional supplies. The principal interstate problems are protection of water supplies in one state serving municipalities in another, and the effect of the diversion of water in one state on the flow in another. Development of the Quabbin Reservoir serves as an excellent example of the intimate relation of various Federal, State and local interests involving the problem of water resources, many of which must ultimately become the subject of interstate compacts.

The pollution problem of the Connecticut is chiefly confined to the lower portion since the stream as it enters Massachusetts is unoffensive. Conditions on the tributaries vary greatly from one to another. The Deerfield is relatively free from pollution because of lack of industrialization and scattered population. Pollution on the Millers River is slightly more severe. While the Westfield and Chicopee in the upper reaches are not badly polluted they both receive considerable pollution in the lower reaches near the Connecticut. These interstate and intertributary pollution problems, though nowhere as serious as those existing on the Merrimack and Blackstone Rivers because of the much larger flow of water in the main stream, are nevertheless serious enough to demand attention. However, in designing measures to alleviate these conditions it should be recognized that there is a proper balance between the recreational demands for purity of a stream and its industrial uses.

The principal recreational problems revolve about the acquisition of adequate and appropriate open spaces for the development of State forests and parks in the various tributaries of the valley which might be used to serve the large concentrations of population in the industrial cities of the lower valley. This, coupled with adequate provision for the development of water sports on convenient lakes and streams throughout the basin, would be of considerable benefit to the region.

#### *Connecticut Valley Main Stream*

The valley of the Connecticut main stream in Massachusetts occupies an area of approximately 662 square miles adjacent to the Connecticut River. Due to the extreme fertility of the flood plain it is one of the richest agricultural areas in the



State, specializing in tobacco, onions, fruits, and poultry products. The population is about 420,000 and has increased 40 per cent since 1910. The southern portion of the valley, consisting of Springfield, Holyoke and Chicopee, is an industrial area of national importance specializing in the manufacture of machinery, electrical goods, tools, metals, textiles and papers. The valley is naturally the focus for both intertributary and interstate water resources problems, foremost among which are flood control and pollution.

Power development in the Massachusetts portion of the main stream is not of vital importance except for the possibility of additional power at Holyoke and Turners Falls, if conservation storage is made a part of the flood control plans.

Water supply conditions are generally satisfactory, with only a few towns with small and scattered population lacking public supplies. Industrial water supplies are not fully satisfactory, conditions having already reached the state where several industries have been forced to drill wells to obtain process water.

Pollution on the lower Connecticut is generally unsatisfactory and at times has been so heavy as to cause the Department of Public Health to restrict the use of the river for bathing. Fortunately the amount of water available for dilution is considerable, and the treatment of waste need not be as complete as in other less favored streams. The problem of recreation in the valley is that of providing facilities to meet the heavy demand from the densely populated industrial areas. This is particularly difficult because the suitability of the river has been greatly jeopardized by pollution and other opportunities are limited by the meagerness of suitable lakes and ponds. The future extension of water recreation in the main stream valley must depend to a large extent upon the elimination of pollution from the river.

#### *Farmington River Basin*

The total area of the Farmington Basin is about 600 square miles, 150 of which, consisting principally of the headwater area, lie in Massachusetts. The present population is approximately 1,500, which represents an approximate decrease of 8 percent since 1910. The valley is served by several State highways, while untreated dirt roads connect the small community centers. The basin is unimportant commercially. No manufacturing industries exist, the principal revenue being derived from recreation, dairying and lumbering. Although few possibilities exist for the economic development of power in the Massachusetts portion, sites are available for storage reservoirs for either flood control, power or water supply, the principal benefits from which would probably accrue to the state of Connecticut. No need for flood control measures in Massachusetts exists. The total damage from the 1936 flood was only \$3,000. There are no public water supply systems since the sparse population would not justify them. About 28 square miles of the drainage area are reserved as water supply area for Hartford, Connecticut. Due to the sparsely settled conditions pollution problems are slight, except for the question of protecting the Hartford water supply. Because of excellent forest cover and the large amount of restricted State-owned land, wild-life is abundant. The chief value of the basin appears to be recreational.

#### *Discussion of Principal Problems*

Upon consideration of the various reports certain fundamental problems emerge. A discussion of various possible solutions is outlined here. The most important problem, of course, is that of flood control. Within the last decade four major storms have occurred, all of which have been extremely heavy, the 1936 being almost disastrous in the Connecticut main stream, while the 1938 storm was extremely severe on the tributaries, especially the Millers and Chicopee. Several methods of control are proposed, the most popular and easily comprehended method is naturally that of flood control reservoirs, based on the proposition that extreme runoff may be caught and held in retarding basins near the headwaters of the river, thus preventing its discharge and the overtaxing of the channel capacity, which would raise general havoc throughout the length of the stream. Other remedies are the use of various palliative measures such as the building of dikes, the enlarging of channel capacities by dredging, riprapping and protecting of critical points, the enlarging of weirs, and the redesign of bridge structures where



openings are inadequate. A third possibility and one which appears to be worthy of consideration is the prevention of encroachment upon the channel or the occupation of land subject to periodic flooding.

It should be remembered that all three methods have their respective places in a comprehensive flood control program and that the proposition that any one is superior to another is more or less academic. In the case of the large streams, the Connecticut and the Merrimack, the basic solution must be the development of large flood control reservoirs in the headwater streams, supplemented by channel rectification and dike construction to protect areas of high value along the lower reaches. On many of the minor streams the problem is principally that of channel rectification and the insistence by public authorities that proper cognizance be taken of the necessary channel requirements when any structure is built. This is especially applicable to the design of bridge openings and dams where in the past the design has been made without adequate knowledge of hydraulic factors. In many instances broad flood plains have been occupied by residential or industrial property, which is periodically flooded and heavy damages incurred which, whether public or private, have nearly always resulted in ultimate burden to the taxpayer. Serious consideration should be given to the possibility of restricting the occupation of this land by zoning.

Another problem which is of the utmost importance to the State is that of stream pollution and waste disposal. Early in the development of the State large industries settled in Massachusetts due to the abundance of water power and the large supply of clean water. Although the water power is still available in undiminished amounts the water is in many instances no longer suitable for industrial purposes, due to heavy pollution from both sanitary and industrial wastes. This, among other difficulties, may cause the emigration of important industries from the State. Not only has the pollution been detrimental to industrial growth, but it has been a very real detriment to the recreational uses of the stream. Serious consideration should be given to the problem of eliminating at least the most offensive of domestic and industrial wastes from such heavily polluted streams as the Merrimack and the Blackstone.

Naturally a balance must be struck between the almost prohibitive cost of the complete elimination of pollution and the dumping of raw sewage directly into the stream. In designing measures to alleviate pollution problems, it should be recognized that there is a proper balance between the social and recreational demands on the stream for purity and its industrial use as a means of disposing of wastes. Further it should be emphasized that it is of little use for a city, located in the lower reaches of a stream, to spend a large amount of money in treating its sewage, while cities above continue to pollute the stream with untreated waste. This is precisely the problem which exists on many of the streams and is not only an inter-municipal but an interstate problem, which can only be solved by inter-municipal and interstate cooperation.

## POWER

Since the completion of the general power survey in 1937 no further State-wide studies have been made. The principal efforts have been concentrated on an inventory of existing water power by basins, carried out as a part of the field studies of the Water Resources Project. These studies have been completed for the Merrimack, Connecticut main stream, Deerfield, Millers, Chicopee, Westfield, Farmington, Blackstone and Housatonic Valleys. Field work is essentially completed for the Charles, Neponset, Concord and Assabet, Parker, Ipswich and Mystic. Field studies consist of a tabulation of power installations giving head, installed capacity, and condition of plant, whether operative, inoperative or washed out. Tabulations and estimates of undeveloped power have also been completed for a number of these basins.

Since a large number of firms have resorted to the purchase of power from utility companies, it appears evident that in many instances separate installations of small power plants have not been profitable. A further cause for the abandonment of individual installations has been damage by floods such as those of 1936 and 1938. In some instances it may be found that it would be cheaper for the individual owners to arrange for the purchase of their power than to risk the



hazard of redeveloping at a site obviously subject to flood damage. It appears that flood control on some of the streams would be beneficial to power users not only for the protection of their capital investment, but, if control reservoirs are designed for storage, they might appreciably increase the dry-month output of the power plants by increasing the low-water flows of the stream.

From studies pursued so far it appears that the major portion of the potential power of the State has already been developed. A substantial portion of that which remains is impossible of economic development under present conditions of demand and load.

## INDUSTRY

Major problems confronting the Commonwealth of Massachusetts can be solved only through development of more business of the right sort within the State. Approach to their solution lies primarily in:

- (1) Assisting manufacturers and merchants now doing business here;
- (2) Encouraging the development of new industries;
- (3) Inducing the migration into Massachusetts of industries which pay sufficient wages to show a profit to the communities where they are located.

Recognizing these truths, the State Planning Board, through its Industrial Surveys Division, has concentrated its efforts on such research as will most directly assist in each of these three lines of endeavor. Part of its work has been to determine the true position of Massachusetts business compared with other competing states and to supply promotional agencies with factual material showing the attractions of the Commonwealth as a business site. Still another part has been devoted to a study of municipal income and costs by which a city or town can judge which industry is likely to show a profit and which a loss to its community.

### *Index of Industrial Activity*

For current reference the division prepares and releases to the public its monthly composite index of Massachusetts industrial activity. This is the only composite index of this sort that has been made available for this State. It includes as component factors the index of industrial employment, issued by the Department of Labor and Industries, the floor area of new building construction, consumption of electric current, shoes manufactured, and cotton textile mill activity. As rapidly as other business series are developed, they will be included in the composite index. Surprising though it may seem, the statistical records of Massachusetts, available monthly, are more limited than those for New England as a whole and are far less complete than those for the entire United States.

Most of the monthly series can be carried back for only short periods, ten years being the limit for several of the more important ones. Such series, falling in a very abnormal period, are not capable of treatment to determine accurately and eliminate typical seasonal variations and the so-called secular trend, which is the growth or decline over a long period of time. For this reason, the index compiled by the Board is not corrected for seasonal variations or long-time growth. Simple though it is in construction and limited in number of component subjects, the index so far has given a rather accurate picture of the changes in industrial activity and has served in a general way as a reflector of the entire business of the State.

### *Research to Help Promotional Work*

The division is assembling the facts in connection with the benefits which Massachusetts offers as an industrial site, to be presented by the proper promotional agencies. Under this head should be included the weekly releases from the State Planning Board which give interesting facts regarding Massachusetts with particular emphasis upon the business concerns of the State. These releases are being carried regularly by about fifty newspapers.

In addition to the special studies above mentioned, the Industrial Surveys Division of the Board has acted on many occasions as a source of information for various State departments, private groups and individuals concerning business conditions of the State. Its work forms an excellent basis of fact for the agencies, both official and private, which are engaged in attracting new business enterprises



to settle within the Commonwealth. The work of this division dovetails very efficiently in this regard with the promotional work for which the Massachusetts Development and Industrial Commission was established.

#### *Labor Costs in Massachusetts*

How do labor costs in Massachusetts compare with those of other states?

This question, and others closely related to it, the State Planning Board undertook to answer through a study of forty largest industries in the State. Data used are from the reports of the United States Census of Manufactures, covering the five census years, 1929, 1931, 1933, 1935 and 1937.

Average annual wage, value added by manufacture per worker and the ratio of value added by manufacture per dollar of wages paid have been determined for each of the forty industries, not only for Massachusetts but for each of the other states in which the industry is important. These figures are now fully compiled for the years 1929, 1931, 1933 and 1935 and data for the year 1937 are being added as rapidly as the census reports for each respective industry are made available.

From a study of the earlier years, it seems quite evident that whatever industrial problems confront Massachusetts, they must be considered from the standpoint of each individual industry. In some lines Massachusetts makes a good showing among competing states as to its efficiency of production and the wages paid to labor. In others, there is obviously room for improvement. Reports by the State Planning Board on the findings of this labor cost study will be made separately for each industry.

Put into the hands of those firms especially concerned, a basis of measurement is made available by which their own business and the business of the State as a whole can be compared in productive efficiency with that of competing states. Incidentally, the same study also throws new light upon the general question of whether low average wages or high average wages produce the greater margin of value over labor costs.

#### *Guide to Municipalities in Seeking New Industry*

The W.P.A. project sponsored by the State Planning Board to set up measures by which a community can judge whether or not a prospective industry will be profitable, is now in progress and will be completed this spring. This factual study, based upon detailed surveys in five representative Massachusetts cities and towns, Worcester, Framingham, Taunton, Norwood and Walpole, is apparently the first statistical effort that has been made in this State to differentiate industries which are profitable to the community from those which are unprofitable.

In their anxiety to secure new industries, communities in the past have found that in some cases they have attracted some concerns which involve more cost in municipal service than they return in wages or other local expenditures. The study above mentioned will set up a more precise set of measures by which to judge in advance whether or not the wages, taxes and other local expenses paid by a prospective company will prove sufficient to offset the municipal costs which it and its employees will create. Such measures also should help to restrain municipalities from carrying competitive bidding for industry to a point which is disastrous to labor and a misfortune to the taxpayers.

#### *Made Possible by W.P.A. Assistance*

The extensive research of the Industrial Division of the Board during the past year has been made possible through the assignment by the Works Progress Administration of capable statisticians who have worked under the direction of the Board's staff supervisor, so that the entire production has involved comparatively little expense to the State.

### **RECREATION**

The 1938 recreation program of the Board has been one of slow but steady progress toward the attainment of the major objectives as originally set forth in 1936; namely, the preparation of a comprehensive State-wide master plan for recreation and the promotion, in so far as possible, of the recreation industry of the State.



With respect to the first or major objective—the preparation of a comprehensive State-wide master plan for recreation—the work undertaken has been of a diversified nature. The complexity of the recreation problems in Massachusetts necessitates a piecemeal approach to a comprehensive plan. Accordingly, the work during the past year has been devoted to filling in the gaps in the inventory of existing conditions and carrying on studies of individual phases of recreation. In this work the Planning Board has had the assistance of a W.P.A. personnel of from 15 to 25 people. The primary work undertaken is set forth briefly as follows:

- (1) The revision and submission to the Legislature of a bill recommending the acquisition of six ocean beaches;
- (2) Recording for the National Park Service of detailed data concerning all public recreation or open-space areas under Federal, State or Metropolitan District Commission administration, and the preparation of various tables summarizing attendance statistics for certain State parks, forests and reservations;
- (3) The continuation of a field investigation to determine the location of potential recreation lands;
- (4) Undertaking or continuing special studies on individual phases of recreation.

The studies of these individual phases of recreation, either on a State-wide or regional basis, have been made because they have been considered in general to be problems requiring an early solution. In conducting these special studies, their relation to other phases of recreation has been recognized and the final results will dovetail readily into the future comprehensive plan and report. These special studies have included:

- (a) Investigation of the desirability and location of highway picnic sites;
- (b) A special study of trailers and trailer camps;
- (c) An investigation of existing and potential inland beaches in the Boston Metropolitan region;
- (d) A survey to ascertain the location, ownership, extent and facilities of all existing ocean beaches, particularly from Boston to Rhode Island, exclusive of Cape Cod;
- (e) A study to determine the need for additional developed State Park area in the Boston Metropolitan region, with specific reference to the qualifications of the Foxboro State Forest. (Special study by a student technician from the Massachusetts Institute of Technology Planning School);
- (f) A compilation of statistics on snowfall at various points throughout the State to serve as a basis for estimating the amount of additional winter sports facilities desirable;
- (g) A study of the location of approach roads to the proposed Duxbury Beach site;
- (h) Compilation of an atlas on which have been outlined and classified all public, semi-public and private recreational lands of which we have record.

Each of these items of work undertaken will be discussed in some detail in the following paragraphs.

On the basis of additional field study in the latter part of 1937, the Board deemed it advisable to revise the bill (House 112 of 1937) recommending the authorization of the acquisition by the Commissioner of Conservation of six ocean beaches over a period of six years. The bill, as revised, was submitted to the Legislature and became House 83 of 1938. This bill, together with numerous others recommending the purchase of various other properties for State park, beach or reservation purposes, became the basis, in part, of House Bill 1944. This bill, entitled "Resolve Providing for a Study by a Special Unpaid Commission of General Subject of Conservation, Including State Parks and Public Provision for Recreation, the Conservation of Wild-life and the Natural Resources, of the Organization of the Department of Conservation, and of the Laws Relating to said Subject," was signed by His Excellency, the Governor, on June 22 and became Chapter 63 of the Resolves of 1938. Since this special recess commission is studying the general



subject of conservation, including ocean beaches, the Board considered it inadvisable to submit beach acquisition legislation to the 1939 General Court. The Chairman and the recreation staff man met with this special commission and offered their assistance. Subsequent to this meeting by request, the Board's technical information was made available to the commission. Thus, the recommendation, if any, on ocean beach acquisition will be made by this special commission.

Early in 1938 the Board was designated by His Excellency Governor Hurley as the State Study Authority to carry out the provisions of Public No. 770 $\frac{1}{2}$ , 74th Congress (H.R. 10104) entitled "A Study of the Park, Parkway and Recreational Area Programs in the United States, and for other purposes." After several conferences with representatives of the National Park Service, the Board agreed to include certain elements of this Study in a W.P.A. Land Resources Project (Recreation Section) and to complete as much of this work as possible. The work under this study included the tabulation, on forms supplied by the Park Service, of detailed information concerning each public, semi-public and private recreational area, its facilities and administrative agency. This work entailed the filling out of the following:

- (a) A one-page form for some 13 administrative agencies;
- (b) A five-page form for approximately 136 areas;
- (c) A recapitulation form of the items a and b.

Several copies of each of these forms were typed for transmittal to the National Park Service. Due to the complexity of the forms, it was impossible to supply all the information required without unnecessarily disrupting the files and personnel of the many administrative agencies, particularly in matters of finance and land acquisition records. However, the greater part of the information requested was obtained through the courtesy and exceptionally fine cooperation of all the administrative agencies.

In addition to the tabulation of data on existing recreational areas and facilities, the Board agreed to utilize the two-page form prepared by the National Park Service in the recording of all field data relative to potential recreational areas and facilities. All field data recorded previous to this arrangement were transposed to the Park Service forms.

By special request, an additional extensive piece of work was carried on for the Park Service. This work consisted of summarizing, both in general and in detail, attendance statistics data collected at several parks, forests and reservations. The summarization included, first, the preparation of two separate recapitulation forms setting forth the details of park patron statements (termed Form PU-5) based on income groups; and secondly, the correction of Form PU-3 (weekly attendance records), the tabulation of this information on recapitulation forms and the preparation of eight detail tables for the several parks, forests and reservations. All this information is to be used by the National Park Service in the preparation of reports on the extent of use of recreational areas at various periods, which will help as a guide in the future development of such areas. This work was done for the Park Service due to the inadequacy of its Recreation Study staff in this region.

During the year 1937 a field investigation was carried on to ascertain the location of the best potential lands for recreation. The survey covered Middlesex, Essex, Worcester and Norfolk Counties. With the assistance of W.P.A. personnel (Project No. 15245) this field investigation has been continued. During the operation period of the project the entire Counties of Plymouth and Bristol and a large part of Franklin, Hampden and Hampshire Counties were completed. This survey was carried out on much the same basis as in 1937. However, prior to going into the field, a careful examination was made of each town, both on topographical and other maps, and aerial photographs with the objective to pre-select areas for investigation and reduce the amount of field work to a minimum. This method of pre-selection proved quite satisfactory and eliminated much unnecessary travel. All sites considered to possess potential recreational value were located on field maps and detail data concerning each site recorded on National Park Service Form No. 4. All information thus received has been compiled, indexed and placed



on file in the State Planning Board office for analysis and final selection in the near future. A tentative draft of a report in explanation of this study has been prepared, together with several maps which will be necessary for an analysis of recreational needs.

In conjunction with the survey of potential sites, a study of the desirability and location of highway or wayside picnic areas has been conducted. Field determination of potential sites for such a purpose was made by the field landscape architects in the course of their other field surveys. In this work, the staff has received much cooperation from the Roadside Development Division of the Department of Public Works. Further information from this Division and field surveys are necessary before this project can be completed. A report and several maps on this subject are in progress.

A special study on the problem of trailers and trailer camps was undertaken during 1937 and with the assistance of W.P.A. personnel was carried through to completion this year. A rather comprehensive report on the subject has been prepared which sets forth the problems which are apt to confront Massachusetts' communities should the trailer movement increase. The report suggests various possible solutions to the many problems and includes a recommended typical draft of legislation, previously presented to the General Court many times for consideration. A limited edition of the report, together with tables, maps and diagrams, is in the process of reproduction for distribution.

To supplement previous studies and recommendations made concerning additional ocean beaches for acquisition and development by the State, a similar investigation of inland beach conditions was undertaken this year. For study purposes the State has been divided into several regions with first consideration being given to the Boston Metropolitan region, due to the density of population and the comparative ease of obtaining the necessary data on existing conditions. Information was obtained from local officials through questionnaires, personal calls and previous field investigation. The aim of this study is to plan a system of regional inland beaches either by the acquisition of new sites on rivers and other water bodies or by the enlargement or further development of existing beaches. It is contemplated that such beaches would be under the direct administration of the State or the Metropolitan District Commission. The study for the Boston Metropolitan region has been completed with the exception of final recommendations. A report and several maps have been prepared and the entire study will be concluded as soon as it is possible to make a final field investigation of the tentative recommended sites and the results checked with various other State agencies. It is hoped to accomplish this in the spring.

To supplement previous data on ocean beaches, the field landscape architect conducting the potential sites survey in Plymouth and Bristol Counties was directed to map the location and extent, and record on special forms details concerning ownership, control and available facilities of public, semi-public and private ocean beaches. The survey covered the shore line from Cohasset to the Rhode Island line exclusive of Cape Cod. Information on existing ocean beaches on Cape Cod was obtained by questionnaire letter and map sent to the Cape Cod Chamber of Commerce. Information concerning the beaches from the New Hampshire line south to Cohasset was obtained through previous field surveys. On the basis of the sites recorded and mapped, three maps have been prepared showing the location and name of all known beaches for the entire Massachusetts coast line, including the islands of Marthas Vineyard and Nantucket.

During the summer months, the Board had the assistance of a student technician from the Massachusetts Institute of Technology Planning School. This student worked full time for the Board with no recompense other than the experience gained in the office. A special recreation problem was assigned to this student to be carried out under the direction of the recreation staff. The problem assigned was a study to determine the need for additional State Park area in the Boston Metropolitan region with special reference to the qualifications of the Foxboro State Forest to fulfill this need. An outline for the study was prepared and the facilities of this office were made available. A report together with several maps and tables was prepared. A copy of this report is on file at the State Planning Board and a copy was presented to the Director of the Planning School for his



comment. At a later date the results of this study will be incorporated with studies to be conducted by the Board and undoubtedly will serve as a guide in these further studies.

As a result of a request from a member of the Western Massachusetts Winter Sports Council, a compilation of statistics on snowfall at various weather stations throughout the State was made to determine if any conclusions could be drawn as to definite cycles of heavy and light snowfall years. Through the courtesy of the United States Weather Bureau, Boston office, the necessary information was obtained and a tentative report prepared. Since the Western Massachusetts Winter Sports Council was contemplating having made a more detailed study by a graduate student through a W.P.A. project, the tentative results of this study were turned over to the secretary of this organization to assist in its study. Undoubtedly, the results of this more detailed study will be forthcoming during the ensuing year. A copy of the tentative report as prepared by this office is on file.

A special study of the location of approach roads to the Duxbury Beach site (one of the beaches proposed for acquisition by the Board) was made. After several tentative studies, a final site location plan of the recommended approach roads was presented to the Board for consideration. The plan developed proposes a parkway route along the Bay Circuit (as proposed by the Trustees of Public Reservations) from Route 3 to Route 3A, then across undeveloped land to the northern end of the proposed beach reservation. Such a route would give beach goers a direct approach from State Route 3 and relieve Route 3A of the additional traffic which would naturally accrue to it when and if the beach is acquired and developed. In 1937 a similar study was made of the approach to the proposed Wingaersheek Beach reservation in West Gloucester. In the future, studies will be made of the approaches to the other ocean beaches recommended by the Board for acquisition as State Reservations.

In order that the Planning Board might have a more adequate record of the location and extent of recreational lands throughout the State, an atlas was compiled, using U.S.G.S. topographical maps, on which have been outlined and classified all the known public, semi-public and private recreational lands. While it is realized that in so far as municipal lands are concerned the atlas is not complete, additions will be made as fast as the information is forthcoming. In so far as possible, this atlas sets forth the facilities available within each area by an appropriate symbol. The atlas is on file at the Board's office for reference.

In the promotion of the recreational industry of the State, there has been increased activity. A map of public picnic sites, beaches and campgrounds was revised and transmitted to the Massachusetts Development and Industrial Commission who had 3,000 copies printed for distribution. The popularity of the map is attested by the fact that the supply was exhausted at an early date and a larger number could well have been used.

A map showing the location of winter sports facilities together with a compiled list of these facilities was prepared late in 1937 for the 1938 winter sports season. Due to the late date of preparation and the unfavorable snow conditions this material was not published. Early in the fall of 1938 the map and the compilation of facilities were revised and turned over to the Massachusetts Development and Industrial Commission for publication. The Commission published this material in a booklet entitled, "Massachusetts, Paradise for Winter Sports". The first issue of 5,000 was speedily exhausted and almost immediately a second edition of 5,000 was published. It is felt that such media as the picnic sites map and the winter sports booklet are exceptionally valuable in the promotion of the recreational industry and it is the intention of the Board to expand its production of such material in so far as the Massachusetts Development and Industrial Commission will use them.

### TRANSPORT

The general program of transportation studies embraces highway, rail, water, and air, but the principal emphasis during the past year has been on highway transportation.

Considerable restudy and refinement of the "Tentative Plan for Major Highway System", originally proposed in 1937, has been made especially in connection with



the development of the Atlantic Coastal Freeway. Working in cooperation with the Massachusetts State Department of Public Works, the New Hampshire Planning Board and the New Hampshire Highway Department, several alternate locations for the Coastal Freeway have been considered. The original plan, still favored by New Hampshire, contemplates the construction of the freeway on the north side of the Merrimack River, crossing it at Tyngsboro, and making use of abandoned railroad right-of-way through New Hampshire.

While New Hampshire would prefer to utilize the existing railroad right-of-way, they admit that such a location would be so far removed from the shore as to be of little advantage to the traffic traveling from Boston to Maine. They agree that U.S. Route 1 as it now exists is essential in providing access to the shore, especially from the Boston area. In Massachusetts there is no question but that the Coastal Freeway should pass south of Lowell and Lawrence, crossing the Merrimack River probably between Haverhill and Newburyport. If so developed, a connection with the present U.S. Route 1 from Boston is proposed near Newburyport. This southern route which is now favored would serve as an excellent route between the Worcester region and the Merrimack Valley, between which there is no adequate connection today. It would naturally serve also as a connecting link between the Merrimack Valley and Maine.

Studies of the routes entering the southern part of the State from both Connecticut and Rhode Island have also been continued through meetings with the State highway officials from Massachusetts, Connecticut and Rhode Island. If and when construction of the Atlantic Coastal Freeway is finally completed, it will serve as a direct link between Washington and Maine, not only offering superb interstate connection but greatly facilitating intrastate travel. Several other minor revisions in the plan have also been made in cooperation with the Department of Public Works and the Division of Metropolitan Planning.

It is gratifying to note that work has already been started by the Public Works Department in carrying out several of the proposals outlined in the tentative plan for a major highway system; namely, (1) The extension of the Boston Circumferential Route 128 toward Gloucester; (2) The beginning of work on the Middlesex Turnpike; (3) Commencement of work on the relocation of Route 2, an extension of the recently constructed portion of the Mohawk Trail.

No further studies of railroad transportation were made during 1938. Likewise, the study of water transportation was omitted, except as to problems of navigation in connection with river studies carried on under the water resources program. After the completion of the proposed aviation plan for 1936 and 1937 no further studies have been made, since progress in this field depends upon the development of the suggestions proposed in the plan.

The Board submitted to the 1938 Legislature a bill authorizing the construction of freeways. Similar bills which were filed with the Legislatures of 1936 and 1937 failed of passage. Accordingly, the Board renewed its recommendation in 1938. This Legislature also refused to enact the legislation and the Board proposes to submit the matter to the Legislature of 1939.

## PUBLIC WORKS

The study of public works programming resulted in the development by the State Planning Board's Committee on Public Works of a report on "A Policy for Stabilizing Public Expenditures", which was approved by the Board in principle October 1937 and approved in its final draft on March 15, 1938. A limited number of copies of this report was printed as a special publication.

The proposal contained therein involves two somewhat new principles in the field of public expenditures:

First, the report asserts the basic differences between Federal and local public works, not only in possibility of control but also in permitted methods of finance. These differences require fundamentally different planning policies in the two fields, viz., for Federal works a flexible program, for municipal works, a steady or stabilized program;

Second, the report suggests the stabilizing effect on the national income that would result from the stabilization of public expenditures.



During the year conferences with many individuals in business and industry as well as in Federal, State and local government services have uncovered a very general approval of the main recommendations of the report. Tax officials and municipal finance officers, as well as representatives of private business, have agreed that municipal reserves, if adequately protected, are desirable. This is a clear departure from current practice. The report suggests a detailed method for the protection of the reserves and for controlling withdrawals.

The endorsements received appeared to warrant a belief that the recommendations of the report are valid in their essential features and that they should be submitted for the broadest public consideration. To this end the Board submitted to the General Court a draft of legislation that would put municipal reserves into effect. (House No. 106—1939—An Act to Establish a State Credit Reserve Fund and Protected Municipal Reserves.)

This proposed act requires cities and towns to establish a Credit Reserve Account into which shall be paid annually, out of taxes, a stated percentage of the total estimated expenses, added thereto in each budget.

The proposed act also includes a definite formula by which the finance officer of the city or town shall determine when and in what amount this credit reserve can be drawn upon in order to assist in carrying on normal activities without increasing the tax rate.

Further provision is made that the funds represented by the credit reserve shall be invested solely in the community's own bonds or in bonds which are direct obligations of the Commonwealth.

This stabilization of public expenditures will require consistent long-range planning by cities and towns in the field of finance as well as in the realm of physical planning. So far as public works planning is concerned, the natural procedure would be to adopt a six-year basis, estimating each year the total requirements for the next six years and plan to finance in the next year as nearly as possible one-sixth of the total. It would be desirable to adopt a capital budget which would show, for each year, all current commitments, their progress toward completion and the amount estimated to be expended on each item, and a budget item for capital expenditures sufficient to take care of the total of these items.

This budget item would be the measuring rod of the program for stabilized public works, its fluctuations from year to year indicating the extent of the failure to accomplish stabilization. Exact equality of annual expenditures is, of course, not assumed. Minor fluctuations will be inevitable. With the general policy declared, operations in each city or town would have a norm to aim at. Long term trends up or down would occur and are not intended to be done away with. It is the short term, wide fluctuations that create business uncertainty and serious unemployment. It is these that should be eliminated. The Credit Reserves suggested, together with a definitely adopted policy of stabilized expenditures, should make their elimination possible.

The details of the plan have been worked out by William Stanley Parker, former member of the Board and Chairman of its Sub-committee on Public Works. Mr. Parker also assisted in drafting the legislative bill now awaiting consideration; in arranging for conferences with leaders in business, industry and public service; in group meetings called to discuss the provisions of the proposed plan; and in the preparation of articles for various technical publications. This assistance is greatly appreciated by the State Planning Board which is glad to recognize at this time its great indebtedness to Mr. Parker for his splendid cooperation throughout.

### COMMUNITY PLANNING

During the year 1938, the Board has continued and expanded its active program of consultation, advice and encouragement to local planning boards. Through the media of office interviews, meetings with local planning boards and committees, participation in planning conferences (discussed in subsequent paragraphs) and addresses to civic and other organizations interested in planning and community development, it is felt that a much closer relationship with the communities has been developed. Further, through these several media, it has been possible to foster a greater appreciation, interest and knowledge of comprehensive planning and zoning. The publication of the Planning Forum has been continued during the



year with nine issues and an index, which comprise Volume 2. The Forum has been distributed monthly to approximately 800 local planning board members and other interested parties. A discussion of the Volume 2 issues of the Forum is given later in this report.

It is estimated that during the past year, the office has answered some 500 requests for information on various phases of local planning and zoning. These requests may be classified broadly as office, letter and lecture contacts. The percentage distribution of these requests by types indicated is approximately as follows: (1) Office 33%; (2) Letter 56%; (3) Lecture 11%. These requests came from 102 cities and towns with planning boards which represent 68% of the communities having planning boards. Requests were also handled from approximately 50 cities and towns not maintaining planning boards, which represent approximately 25% of this type of community. Thus, the staff has answered requests from 150 or approximately 42% of the cities and towns in the Commonwealth.

In addition to its general advisory work on planning and zoning matters, the staff has assisted in the preparation of several zoning bylaws, particularly by reviewing bylaws prepared locally without technical assistance, and offering suggestions on arrangement of clauses and reconciling contradictions with the State Zoning Enabling Act. Several requests have been made by the local communities for information on particular phases of zoning and as a result of these requests several analyses have been made of existing zoning laws to obtain this information. One such analysis, namely, "Minimum Lot Area Regulations," was made in considerable detail and published in the June issue of the Planning Forum. A special study was undertaken late in the year to have briefs made of the Supreme Court decisions on zoning matters. The results of this study will be published in an early issue of Volume 3 of the Planning Forum.

The staff has assisted in the establishment and organization of several new planning boards. It has aided many of the new boards and special committees considering the establishment of boards in interpreting Chapter 211, particularly with regard to Sections 81 F to J (subdivision plat control) by applying interpretations to specific cases that have confronted the boards.

A typical set of subdivision regulations, suggested as a basis for adoption by Planning Boards acting under Chapter 41, Sections 81F to J inclusive, was prepared for the Board by Arthur C. Comey, Consultant. Mimeographed copies were prepared for distribution to the many local boards now functioning under the provisions of this new Planning Enabling Act. Many requests for this document have been filled.

The Board has continued the work of compiling a reference library on all phases of planning. The file of zoning ordinances and bylaws has been enlarged to some extent and it is hoped that those now missing will be obtained during the coming year. These reference files have been used by members of local planning boards and they will continue to be available to anyone interested in planning.

As one phase of its planning promotional program, the Board has cooperated with the Massachusetts Federation of Planning Boards in arranging for three State-wide planning conferences. The first of these, which was held at Tufts College in Medford on December 4, 1937, was devoted to a discussion of the provisions of chapter 211 of the Acts of 1936—"An Improved Method of Municipal Planning".

The second conference was held at the Hotel Weldon in Greenfield on February 26, 1938, and was devoted primarily to a consideration of various aspects of zoning work.

The third conference was held at the Hotel Kimball in Springfield on October 28, 1938. As the Twenty-Fifth Annual Meeting of the Federation it was looked upon as marking a quarter of a century of activity and service.

At each one of these conferences the Chairman and members of the State Planning Board and of its staff, as well as its consultants, participated in the program of the meeting and in discussion. A complete record of the proceedings of each conference has been published by the Federation, as Bulletins No. 38, 39 and 40 respectively.

In addition, the Board, through its members and its staff, was represented on the program of a planning conference sponsored by the Massachusetts Federation



of Planning Boards in connection with a short summer course in planning for both technicians and laymen offered by the School of Architecture of the Massachusetts Institute of Technology, cooperating with the American Planning and Civic Association of Washington, D.C. As will be noted from the section devoted to the Forum, the entire proceedings of this Conference were carried in the official organ of the Board.

The Board, through its members and its staff, has participated in conferences of a planning nature both in Massachusetts and outside the State whenever it felt that it could either render assistance, or profit from the experiences of other co-operating organizations. These conferences included, among others, the following:

Zoning Conference, Chicago, Illinois—December, 1937—by Harold L. Ickes, Secretary of the Interior, acting as Chairman of the National Resources Committee

Conference of Commission on Interstate Cooperation, Philadelphia, Pennsylvania—December, 1937—Devoted to a discussion of Regional Authorities Bills and pollution bills pending in Congress

National Conference on Parks, Norris, Tennessee—May, 1938—Chairman attended by designation of the Governor as State's Representative

National Planning Conference, Minneapolis, Minnesota—June, 1938—sponsored by the American City Planning Institute, the American Planning and Civic Association and the American Society of Planning Officials.

By vote of the four nation-wide planning organizations, i.e., the American Society of Planning Officials, the American City Planning Institute, the American Planning and Civic Association and the National Economic and Social Planning Association, the National Planning Conference will be held in Boston in May, 1939. This is the first time since 1912 that this group has met in Boston. The Chairman of the State Planning Board has been invited by the participating organizations to serve as Director of the Conference.

## FORUM

With the fiscal year 1938, the official bulletin of the Board entitled "A Planning Forum" entered the second year of its existence. The life of this bulletin is practically contemporaneous with that of the Board. Its origin is based upon the mandate contained in the Board's enabling act, chapter 475 of the Acts of 1935, that the Board shall advise and cooperate with national, regional and county, municipal and other local planning, housing and zoning agencies within the Commonwealth for the purpose of promoting coordination between the State and local plans and development.

Nine numbers, which were practically Volume II in its entirety, were issued during 1938. No. 10 which completes Volume II is an index of the nine preceding numbers. The bulletin was issued at regular monthly intervals except for a brief period when it was uncertain whether the Legislature would provide funds for its continuance. During this period, the entire Forum mailing list was circulated. This list consists principally of members of local planning boards who have signified a desire to receive the Forum. The circular contained the information that for reasons of economy, funds for the Forum might be curtailed. Each person was requested to express his opinion as to whether the contents of the magazine were of sufficient value to him personally to warrant the expenditure, despite the need for curtailing expenses as much as possible. The result was an enthusiastic endorsement of the continuance of the Forum. The evidence was presented to the Legislature and funds were appropriated. The accumulated material was then made available to the local planning boards in postponed issues of the Forum.

The outline of the contents of the bulletin, carried herein, will indicate the diversity of material presented in its pages. The Board has combed the planning field in order that it might fulfill its obligation to serve as a clearing house for planning data. It has also been the custom of the Board to carry in each issue a communication from the Secretary of the Massachusetts Federation of Planning Boards on current planning activities.

Volume II, No. 1 contains a complete list of the membership of local planning boards, data as to their appropriations and status and an outline of their activities



for the preceding year, as submitted by the Boards themselves. This outline also contains proposals for action during the current year. The Federation page in this issue is devoted to a brief report on the Conference sponsored by the Federation at Tufts College in Medford on December 4, together with a paper on "Applications for Changes and Variations in Zoning Laws" by Roger D. Swaim, a member of the Executive Board of the Federation.

Through the courtesy of the Lecture and Discussion Group Division of the Adult Recreation Project of the Works Progress Administration, the Board was privileged to sponsor a series of broadcasts having to do with several important aspects of the planning problem in the State. Inasmuch as the subjects covered in this series of broadcasts were of particular interest to members of local planning boards, the Board decided to make these broadcasts permanently available through the medium of the Forum. Accordingly the second number of Volume II is devoted largely to a presentation of this series of broadcasts. The following listing of the subjects covered will indicate the unity of the series:

"Planning for the Commonwealth" by Elisabeth M. Herlihy, Chairman, Massachusetts State Planning Board

"Regional Planning" by William Stanley Parker, Member, Massachusetts State Planning Board and Vice-Chairman, Boston City Planning Board

"City Planning" by Frederic H. Fay, Member, Massachusetts State Planning Board and Chairman, Boston City Planning Board

"Academic Aspects of Planning" by Frederick J. Adams, Assistant Professor of City Planning, Massachusetts Institute of Technology

"Zoning for Home Protection" by Howard K. Menhinick, Technical Adviser, Massachusetts State Planning Board

"Progress in Low Cost Housing" by Sidney T. Strickland, Chairman, Massachusetts State Board of Housing.

In addition to the foregoing, this issue contains under the heading of "Legislative Notes" a discussion of the status of bills related to planning which were pending in the Legislature by Agnes C. Conroy, Secretary to the Board. The issue also contains the usual Federation letter which likewise is devoted to a discussion of pending legislation of particular interest to Federation members. The Secretary of the Federation, Samuel L. Conner, also reported briefly on the Winter Zoning Conference sponsored by the Federation at Greenfield, Massachusetts, on February 26, 1938.

Volume II, No. 3 is devoted to a discussion of water resources problems. The introduction of the Board's Report on Drainage Basins in Massachusetts is carried, as well as the summary of the Blackstone River Report, which was the first of the drainage basins of the State studied by the Board. The news release on the Blackstone River Report is also carried in this issue, as it was felt that this presentation would be of particular value to the non-technical readers of the Forum. The radio broadcast on "Water Resources Problems" by Draveaux Bender, Planning Assistant of the Massachusetts State Planning Board, rounds out in this issue a comprehensive presentation of the Massachusetts water problem. A news item in this issue carries the information that at the request of the Governor, the Chairman had arranged a meeting of persons having jurisdiction over State reservations, forests and parks in Massachusetts with a view to co-ordinating the administration of their recreational activities and developing plans for their more extensive use. This activity will be discussed in detail in another section of this report. The Federation pages are devoted to a discussion of zoning, including Roger Swaim's article on "Zoning in Rural Communities." In accordance with its policy of bringing to the attention of its members the best in the current literature of Planning, the Forum reviews "The Master Plan" by Edward M. Bassett, well known authority in the planning field.

Volume II, No. 4 carries the summary of the Population Study of Massachusetts. The Federation pages contain an account of the organization meeting of the New York State Federation of Planning Boards. Henry B. Alvord, Treasurer of the Massachusetts Federation of Planning Boards, attended this meeting and outlined for the benefit of the newly formed organization the activities of the Massachusetts



Federation of Planning Boards. The tentative program for the Planning Conference sponsored by the Federation in connection with the summer planning program arranged by Massachusetts Institute of Technology and the American Planning and Civic Association, which was held on July 16, also appears in this issue.

Volume II, No. 5 opens with the official announcement that the National Planning Conference will be held in Boston in May, 1939. Arrangements for the Conference are discussed as far as possible. The papers presented at the forenoon and luncheon sessions of the Summer Planning Conference, announcement of which was carried in the preceding issue, are reproduced in full in this issue of the Forum. They are as follows:

"The New England of the Future" by Roland B. Greeley, Research Assistant, New England Regional Planning Commission

"Recreational Opportunities in Massachusetts" by Karl M. Tomfohrde, Planning Assistant, Massachusetts State Planning Board

"The Traffic Situation in the Boston Metropolitan District" by Otis D. Fellows, Chief Engineer, Division of Metropolitan Planning

"Functions of a Zoning Ordinance" by Frank H. Malley, Acting Secretary, Boston City Planning Board

"Highlights of the 1938 National Conference on Planning" by Elisabeth M. Herlihy, Chairman, Massachusetts State Planning Board

In addition to the foregoing, the Forum quotes in full an article from the "American City" of July 1938, entitled "Is Your City Getting its Share of the New Federal Funds."

Volume II, No. 6 continues the recording of the papers presented at the Summer Planning Conference, as follows:

"Land Use Planning in Rural Areas" by David Rozman, Associate Consultant on Land Use Problems, Massachusetts State Planning Board

"Can We Prevent Depressions" by William Stanley Parker, Member, Massachusetts State Planning Board

"Re-Zoning of Cities and Towns" by Samuel L. Conner, Secretary, Massachusetts Federation of Planning Boards

"Housing Policies and Programs" by Charles P. Norton, Architectural Adviser, Massachusetts State Board of Housing.

A stimulating call to action to planning boards carried in the editorial columns of the "New York Planning News" concludes this issue.

Volume II, No. 7 opens with a report of A Committee on Utilities of the Belmont Taxpayers' Association, Inc., recommending to the town the acceptance of Chapter 211 of the Acts of 1936, An Improved Municipal Planning Act. The outcome of proposals for planning legislation in the 1938 Legislature is discussed in an article by Agnes C. Conroy, Secretary to the Massachusetts State Planning Board. In an article on "A Comparison of Minimum Lot Area Regulations in Massachusetts Zoned Communities", Karl M. Tomfohrde, Planning Assistant of the Massachusetts State Planning Board, considers the legality and practicability of these regulations and reviews the regulations in effect in specific communities. For the records of the local planning boards, the amendments to the planning and zoning enabling acts made by the 1938 Legislature are quoted in full. "Procedure under Zoning Law" and a "Review of Pertinent Planning and Zoning Judicial Decisions" by Alfred Bettman in the American Society of Planning Officials "News Letter" round out a presentation of current zoning data. An item of particular interest to Massachusetts, presented in the report of the National Resources Committee on "The Problems of a Changing Population" entitled "The Trend of Manufacturing in Massachusetts" is also carried in this issue. A compilation of the publications of State Planning Boards throughout the country is presented by Violet M. E. Thompson, Librarian of the Massachusetts State Planning Board. Mr. Conner, Secretary to the Federation, discusses a specific violation of zoning ordinances with which planning boards are having a great deal of trouble at the present time.

Volume II, No. 8 is devoted to Western Massachusetts. It contains a discussion of the Connecticut Valley and its necessarily closely related problems of



flood control and pollution. A map of Massachusetts is carried on which public and semi-public recreation lands are indicated and in connection with this map is a discussion of public and semi-public lands with particular emphasis on those in Western Massachusetts. Another map of Western Massachusetts, on which the towns having planning and zoning ordinances are indicated, appears in this issue. This is accompanied by a discussion. Representatives of the State Planning Board personally visited each community and solicited from each local planning board in the area an account of its planning and zoning activities together with any other information of general interest regarding the municipality. The boards cooperated splendidly and the data form an interesting feature in the Western Massachusetts issue. A review of "The Culture of Cities" by Lewis Mumford is contributed by Roger D. Swaim, member of the Concord Planning Board and of the Executive Board of the Massachusetts Federation of Planning Boards.

A notice taken from the "News Letter" of the American Society of Planning Officials regarding an amendment in the zoning ordinance of Glynn County, Georgia, providing for agricultural districts, a brief acknowledgment and outline of the activities of volunteer organizations engaged in activities allied with planning and a copy of the tentative program of the Annual Conference of the Massachusetts Federation of Planning Boards to be held in Springfield on September 30 and October 1 complete this issue.

Volume II, No. 9 is devoted to a variety of timely matters. The Forum reproduces a letter sent immediately after the hurricane of September 21, 1938 urging local planning boards to act at once in producing plans for rehabilitation measures. Maynard O. Saunders, Engineer-Secretary of the Springfield Planning Board, contributes a running account of the activities of the Flood Information Bureau at stations along the Connecticut River during the flood and hurricane of September 21. The accomplishments of this Bureau cannot fail to inspire other communities in the State. "Notes from a Planner's Vacation in Scandinavia" contributed by Arthur C. Comey, Consultant to the Board, together with "English Housing" by Arthur A. Shurecliff, Landscape Architect, bring to Forum readers glimpses of European activities seen through the eyes of planners familiar with our own problems. The Forum congratulates North Adams upon the successful efforts of its Planning Board in bringing about an agreement between local, State and Federal authorities and the Boston & Maine Railroad in connection with the abolition of the State Street Grade Crossing. It reproduces an editorial from the North Adams Transcript on the matter and carries a report which it requested from George Hadley, Secretary of the North Adams Planning Board, giving the history of the project. An article on the "Current Activity of the Worcester Planning Board" by J. Ross McKeever, Instructor in City Planning, Massachusetts Institute of Technology, completes this issue and Volume II of the Forum with the exception of the Index.

### FLOOD CONTROL

The history of the compacts entered into by the States of New Hampshire, Vermont, Massachusetts and Connecticut is given at some length in the annual report of 1937. As indicated in that report, these compacts failed of ratification in 1937. In January 1938, the President called a conference in Washington of the New England Governors to consider the question of flood control in New England. The Chairman of the Board, at the request of the Governor, accompanied him to Washington, inasmuch as the Board is the officially constituted agency of the State in its negotiations with the other New England States, the State of New York, and the Federal Government on matters of flood control. The Chairman acted at this conference in an advisory capacity and placed at the disposal of the Governor an analysis and interpretation of the very large volume of flood control data in the files of the Board.

Again in April 1938, at the Governor's request, the Chairman appeared before the Congressional House Committee on Flood Control in connection with the ratification of the Interstate Compacts. At that time the Congressional Committee did not have the matter formally before it, but had requested expressions of opinion on flood control and related matters in New England from New England authorities.



At the same time, the matter was before the Massachusetts Legislature in the form of resolutions memorializing Congress in favor of ratification of the Interstate Compacts. The adoption of the resolution was recommended by the Committee on Constitutional Law and this recommendation was accepted by both branches of the Legislature.

In May, the Chairman and the Chief Engineer appeared before the Army Engineers in Washington at a hearing on the question of local flood control measures on the Merrimack River. The Chairman at that hearing emphasized the desirability of local flood control measures as supplementary to the major flood control proposals.

In the latter part of June, Congress enacted a flood control bill which authorizes the Federal Government to bear the entire cost of the flood control dams and to assume title to the lands on which they are constructed. The passage of this bill obviates the necessity for compacts among the New England States.

The assumption of title by the Federal Government to the lands on which the dams are to be constructed has not yet been accepted by the New England States. The question of an invasion of states' rights is involved. Efforts are being made at the present time to effect a solution of the controversy, which will be satisfactory both to the Federal Government and to the New England States.

### LEGISLATION

The Board submitted two recommendations to the Legislature of 1938, as follows:

House No. 75—Bill authorizing the Department of Public Works to protect certain existing and proposed state highways from indiscriminate access.

House No. 83—Bill to provide for the acquisition and development by the State of six ocean beaches.

The first bill is what is known popularly as the Freeway Bill. The Board was supported in this recommendation by similar bills filed by the Department of Public Works and the Massachusetts Federation of Planning Boards. Much of the value of our modern high-speed highways is lost through frequent intersections. We have already accepted limitation of access in our parkway system. We have constructed border roads and permitted access only at stated locations. The Board in its Freeway Bill is seeking the application of this same rule to modern high-speed highways, in order that their value as such may not be entirely lost. The Board did not succeed in securing the passage of this legislation at the 1938 session, but the ground work has been laid and it plans to continue its efforts at the next session of the Legislature.

The second bill provided for the acquisition over a period of six years of Westport Beach in the town of Westport; Duxbury Beach in the towns of Duxbury and Marshfield; Wingaersheek Beach in the city of Gloucester; Popponesset Beach in the town of Mashpee; Harding's Beach in the town of Chatham; and Scusset Beach in the town of Sandwich. The objective of this bill is the implementing of the Board's policy to insure an adequate portion of Massachusetts' shore line being preserved for all time for the recreation of its citizens. The Board was supported in its recommendation for the acquisition of Westport Beach by similar legislative recommendations of the Massachusetts Department of Conservation and the Massachusetts Forest and Park Association. The entire matter of conservation, including the Board's recommendation for the acquisition of ocean beaches was referred to a Special Commission on Conservation, ordered to report to the Legislature of 1939.

### *Merrimack Valley Report*

Chapter 60 of the Resolves of 1937 created a special unpaid commission to consist of the Commissioner of Public Health, the Commissioner of the Department of Public Utilities, the Commissioner of Public Works, the Commissioner of Conservation, or a representative to be designated in each case, and the Chairman of the State Planning Board. The Commission was directed to investigate and study fourteen specific matters in the Merrimack Valley, as follows:



- (a) Transportation service and facilities
- (b) Traffic conditions
- (c) Establishment and operation of a sewerage district
- (d) Disposal of waste and refuse
- (e) Purification of the waters of the Merrimack
- (f) Improvement of roads, highways and bridges and the improvement and beautification of roadsides
- (g) Improvement of waterways, particularly the Merrimack River with a view to making said river navigable
- (h) Water supply
- (i) Acquisition and improvement of recreational facilities, including the construction of bath houses and beaches
- (j) Acquisition of sites for parks, playgrounds, outing groves and camping facilities and providing for winter sports
- (k) Stocking of waterways for fishing
- (l) Flood control of the waters of the Merrimack River
- (m) Soil erosion and conservation
- (n) General improvement of natural resources

Compliance with the order for a study and report of such a comprehensive nature within the time allotted by the Legislature would have been impossible without intensive effort on the part of the combined forces of the departments named in the resolve creating the special commission. For the purposes of study, the various items in the resolve were assigned to the following departments for their special consideration:

- 1. Department of Public Health:
  - (c) Establishment and operation of a sewerage district
  - (d) Disposal of waste and refuse
  - (e) Purification of the waters of the Merrimack River
  - (h) Water supply
- 2. Department of Public Works, Department of Public Utilities and Planning Board:
  - (a) Transportation service and facilities
  - (b) Traffic conditions
  - (f) Improvement of waterways, particularly the Merrimack River, with a view to making said river navigable
- 3. Department of Public Health, Department of Conservation and Planning Board:
  - (i) Acquisition and improvement of recreational facilities, including the construction of bath houses and beaches
- 4. Department of Conservation and Planning Board:
  - (j) Acquisition of sites for parks, playgrounds, outing groves, and camping facilities and providing for winter sports
- 5. Department of Conservation:
  - (k) Stocking waterways for fishing
- 6. Planning Board:
  - (l) Flood control of the waters of the Merrimack River
  - (m) Soil erosion and land conservation
  - (n) General improvement of the natural resources

In accordance with the above program, the technical committee was divided into various subcommittees to cooperate on the problems as outlined. After independent consideration and study, reports were submitted by the subcommittees to the main technical committee. The technical work was placed under the direction of Arthur W. Dean, Chief Engineer of the State Planning Board. The entire area of the Merrimack Valley was mapped on a scale of one inch to a mile showing the major types of land utilization and cover. The reports of the subcommittees were considered by the main technical committee in the light of the results of public hearings and discussions held at Lowell, Haverhill and Newburyport. The members of the Special Commission with members of the technical committee inspected the Merrimack River from a launch between Newburyport and Haverhill. A detailed report in which each phase of the Merrimack Valley problem was con-



sidered was presented to the Legislature of 1938. The report carried two recommendations for legislative enactment, as follows:

- (a) An act establishing the Merrimack River Valley Water District and the Merrimack Valley Water District Commission;
- (b) An act with reference to the construction of sewage treatment works and connections with sewerage systems in the Merrimack River Valley.

The carrying out of the recommendations involved the expenditure of substantial sums of money, but the Special Commission could see no justification for recommending mere palliative measures. The authorities in the valley were not in a position to contribute any substantial portion of the cost, and adequate funds were not available from State and Federal sources. Therefore the legislative committees to which the recommendations were referred reported that the matter should be referred to the next annual session of the Legislature and this recommendation was accepted in both branches of the Legislature.

### COOPERATION

The Board has had the full cooperation of the National Resources Committee, the national planning agency, and has acted as liaison agent for that committee in the State. In pursuance of that function, the Board at the request of the National Resources Committee transmitted to it a report on the status of Massachusetts P.W.A. projects. Likewise it cooperated with the Committee in the compilation of a digest and index of planning research projects. In this connection the Board contacted local planning and other officials throughout the State.

Two members of the Board have continued to serve as members of the New England Regional Planning Commission, which is composed of the Chairmen of the State Planning Boards of New England, two members-at-large and the Chairman of the National Resources Committee, Region No. 1. The Chairman of the Board has served ex-officio and Mr. Fay has served as a member-at-large. In addition the Chairman and the Chief Engineer of the Board have served on the Drainage Basin Committee of the New England Regional Planning Commission. Thus Massachusetts' interests in the plans for the region have been amply represented.

Through attendance at public hearings and the furnishing of all its available data, the Board has cooperated with the Army Engineers in their flood control studies. In turn the Board is very much indebted to the Army Engineers for the splendid assistance they have rendered it at all times.

At the request of the National Park Service and by official designation of the Governor as the representative of the State, the Board has participated in a nationwide survey of publicly and privately owned recreational areas. Complete data for Massachusetts were furnished. The survey is discussed at length in the section of this report devoted to Recreation.

At the request of the Mayors' Club of Massachusetts, the Chairman served as a member of the State Appraisal Committee of the U. S. Community Improvement Appraisal, under the general sponsorship of the American Engineering Council; the American Society of Planning Officials; the American Institute of Architects; the American Municipal Association; the American Public Welfare Association; the National Aeronautic Association; the National Education Association; the National Recreation Association; the United States Bureau of Public Roads; the United States Conference of Mayors and the Works Progress Administration.

Every mayor and every chairman of a board of selectmen in the State was asked by the Mayors' Club, which at its annual meeting had unanimously voted to accept local sponsorship for the work, to weigh the worth of the Federal Works Program in their communities. The Committee was invited to assist in coordinating the testimony offered by the cities and towns, to help evaluate and summarize these local reports, and to prepare a State-wide report appraising the types of projects and methods of operation from the twin standpoints of:

- (a) Effect on the unemployed; and
- (b) Effect on the communities as a whole.

By vote of the other members of the Committee, the Chairman of the State Planning Board served as Chairman of the group. The survey, which was the first



of its kind to be made in New England, included an analysis of one hundred and fifty-seven reports by mayors, selectmen and other officials, representing more than 70% of the entire population of the State.

Similar surveys were conducted in forty-one other states and the findings summarized by the National Appraisal Committee for publication early in 1938.

Attendance at and participation in meetings of local and regional planning organizations have been frequent. Also whenever an opportunity was presented to inform any interested group regarding matters related to planning, the Board has been very glad to furnish speakers.

The Chairman contributed to the quarterly publication of the State Department of Public Health, "The Commonwealth", a discussion of "The State Program as it Relates to Planning." An exposition of the Land Use studies of the Board was contributed to the September-October issue of "The Planners Journal" by David Rozman, the Board's Land Use Consultant. These articles are in addition to the article contributed to the "American City" by William Stanley Parker on "A Policy for Stabilizing Public Expenditures".

Through a cooperative arrangement made with the School of City Planning of the Massachusetts Institute of Technology, the services of two students were furnished to the Board during the summer of 1938. One of these students was engaged on a recreational survey and one on an industrial survey. Their work was supervised by members of the technical staff of the Board. Through this arrangement, the students were enabled to secure actual experience in a planning office under expert supervision and the Board was the recipient of valuable research work, which it was not in a position to finance.

The work of the Special Commission on the Merrimack River Valley in which the Board cooperated is discussed in the section of this report devoted to Legislation.

An extensive file of material, composed of articles and publications of particular interest to those in the planning field, has been assembled for distribution.

The Board has cooperated with the Special Commission to represent Massachusetts at the World's Fair in New York through the attendance of its Chief Engineer at meetings of the Commission and his services as a member of a sub-committee.

The Chairman of the Board functions by appointment of the Governor as a member of the Special Commission on Functions and Activities Affecting Cities and Towns of the Metropolitan District, created by Chapter 71 of the Resolves of 1938. The Chairman was authorized by the Board to act as co-sponsor, with the Metropolitan District Commission and the Boston City Planning Board, of a W.P.A. project to assist the Commission in its investigation. This project is now under way.

The Board is also represented on the Interstate Cooperation Commission through the membership of its Chairman by appointment of the Governor under the provisions of Chapter 404 of the Acts of the year 1937. It has likewise cooperated with the Special Commission on Conservation, established by Chapter 63 of the Resolves of 1938.

Immediately following the flood and hurricane of September, 1938, the Board communicated with the local planning chairmen throughout the State, offering every assistance in its power, to the end that the work of reconstruction and rehabilitation might be of the greatest possible permanent benefit. It also made a State-wide survey of damage and attended local meetings for a discussion of plans whenever requested.

At the request of the Postmaster of Boston, the Chairman served as a member of the Committee for the Observance of Air Mail Week.

In addition to the specific instances of cooperation herein enumerated, whenever requested, the Board has furnished to National, State and local officials any data in its possession bearing on the subject matter desired.

### FEDERAL COOPERATION

Under the direction and sponsorship of the State Planning staff, the W.P.A. State Planning Projects have continued studies in the fields of land conservation and water resources throughout the State during the past year.

The objective of the water studies has been to make field studies, gather field data, correlate existing data and make reports on the status of water resources



within the various watersheds of the State for the purpose of providing a sound basis for the planning of future improvements. Federal funds to the extent of \$88,120 were expended during the fiscal year on this project and an average of 128 persons were employed.

The objective of the land conservation studies has been to complete field surveys and to correlate land utilization and coverage, soil classification, roads and waterways and topographical data; to map these data on town maps and graph land coverage and soil types for each town in Massachusetts. Federal funds to the extent of \$106,120 were expended on this project and an average of 102 persons were employed.

Two projects have been supervised by the Industrial Division of the Board. They have been known as Labor Costs and Factual Data respectively. The Labor Costs project objective has been the compilation, tabulation and graphing of data on labor costs in Massachusetts and other leading industrial states on the basis of value added per dollar of wages paid for each of the more important industries. Federal funds to the extent of \$11,309 have been expended on this project and an average of 16 persons employed. The objective of the Factual Data project has been the analysis of community costs and income with relation to their varying characteristic use. Federal funds to the extent of \$32,532 have been expended on this project and an average of 70 persons has been employed.

These projects have been operated from a Boston headquarters with branch offices in Springfield, Worcester and Lynn on the Water Resources project; Springfield, Worcester, Pittsfield and Taunton on the Land project; and Taunton, Worcester, Framingham and Walpole on the Factual Data project. The Labor Costs project has been operated from the Boston office.

It is obvious that the studies of the Board would have been very much more restricted without the aid of the substantial contributions of the Federal Government. On the other hand, without the comprehensive plan of the Board for the application of this research, the value of the studies would be questionable.

### REGIONAL AUTHORITIES BILLS

At the request of the Governor, the Chairman attended the hearing held on December 10, 1937 by the Congressional Committee on Rivers and Harbors on the so-called Regional Authorities Bills, S. 2555 and H.R. 7365, known as the Norris and Mansfield bills respectively. Connecticut and Vermont were also represented at the hearing and the three New England states represented opposed the creation of regional authorities as proposed in the bills.

By direction of the New England Governors, the committee composed of representatives from the six New England States appointed by the Governors to study and report on various aspects of the water resources problems of the region considered the above mentioned Regional Authorities Bills. After a series of meetings the Chairman of the Massachusetts State Planning Board, as acting-chairman of the committee, on January 7, 1938 transmitted to Governor Wilbur L. Cross, Chairman of the New England Governors' Conference, a memorandum covering S. 2555 and H.R. 7365. The Committee consisted of:

Edward J. Daly, *Chairman*, Connecticut  
 Sanford H. Wadhams, Connecticut  
 James A. Newlands, Connecticut  
 John Jacobson, Jr., New Hampshire  
 Richard S. Holmgren, New Hampshire  
 Robert W. Upton, New Hampshire  
 Ralph E. Flanders, Vermont  
 Walter S. Fenton, Vermont  
 Philip Shutler, Vermont  
 David E. Moulton, Maine  
 M. R. Stackpole, Maine  
 Bryant L. Hopkins, Maine  
 Charles F. McElroy, Rhode Island  
 Walter J. Shea, Rhode Island  
 John P. Hartigan, Rhode Island



Paul A. Dever, Massachusetts  
 William F. Callahan, Massachusetts  
 Elisabeth M. Herlihy, Massachusetts

In this memorandum, the Committee stated that it accepted the principle of regional planning on a voluntary and cooperative basis and recommended such legislation to the favorable consideration of the Governors, but it objected to the imposition of planning by an agency having no direct responsibility to the people. It concluded that the provisions of the two bills under consideration involved a dangerous usurpation of states' rights and a wrongful concentration of power in the hands of the Federal Government. Thirteen specific objections were enumerated by the committee in its memorandum, and, in addition, it registered blanket objection to Title II of both bills, inasmuch as it felt that enactment would result in complete control by the Government of the distribution of all electric power with consequent destruction of private initiative and enterprise and usurpation of the control that the people of a state now have over their own natural resources.

The Committee made four constructive recommendations to implement the principle of regional planning on a voluntary and cooperative basis.

As yet Congress has not enacted a regional authorities bill.

### STATE COUNCIL OF PUBLIC RESERVATIONS

Commissioners and representatives having charge of State reservations, forests and parks in Massachusetts met on June 3 in the offices of the State Planning Board at the request of His Excellency Governor Charles F. Hurley, to co-ordinate the administration of their recreational activities and lay plans for further development and publicizing of these resources.

An informal organization was set up to be known as the State Council of Public Reservations, having as members the Commissioners and others in charge of public recreational areas of the Commonwealth in cooperation with the State Planning Board. The Chairman of the State Planning Board was elected Chairman of the new Council and the Secretary to the Board was elected Secretary to the Council. The Massachusetts Development and Industrial Commission and the Trustees of Public Reservations were invited to participate.

The following authorities are represented on the Council:

Massachusetts State Planning Board  
 Massachusetts Department of Conservation  
 Metropolitan District Commission  
 Massachusetts Department of Public Works  
 Massachusetts Development and Industrial Commission  
 Wachusett Mountain State Reservation Commission  
 Mt. Tom State Reservation Commission  
 Mt. Everett Reservation Commission  
 Purgatory Chasm Reservation Commission  
 Greylock Reservation Commission  
 Trustees of Public Reservations

Other authorities were unable to attend meetings at the times set. It was agreed that a complete booklet descriptive of State Reservations should be made available to the touring public as the first step in publicizing available recreational areas in Massachusetts. The preparation of this booklet is under way.

### LIBRARY

The Massachusetts State Planning Board's library is a reference collection of works concerning the various phases of planning, state planning in particular. It is not generally circulated, although it is used by members of the local city and town planning boards, State officials, and the planning departments of several educational institutions in the vicinity of Boston, as well as members of the Planning Board staff.

Basic source material includes such publications as the United States Bureau of the Census reports on agriculture, population, manufactures, etc.; the General



Laws of Massachusetts, Tercentenary Edition, the Acts and Resolves of the General Court from 1933 to date; reports of the National Resources Committee; reports of state and regional planning agencies, and periodicals.

The classification used is that outlined in "State and National Planning" by Arthur C. Comey and Katherine McNamara, 1937, Cutter's author table being used for the identification of individual publications. Location of publications is made possible by an alphabetical author-title-subject catalog.

Material is secured in the following ways: (1) through exchange or gratis where possible; (2) by purchase for reference of especially valuable publications; and (3) by inter-library loan. The Massachusetts State Library has been very kind, having contributed several volumes of the United States Census from 1920 to date.

The Board has accumulated 691 books and approximately 1,900 pamphlets since its establishment in 1935. Some 40 periodical publications are received regularly by the library at the present time, and special issues of others are purchased when they contain articles relating to planning.

### MAPS AND CHARTS

The Maps and Charts file of the Board is very extensive. For maps and charts which have originated outside of the office, the system of classification followed has been the same as that followed in the library; i.e., "State and National Planning" by Arthur C. Comey and Katherine McNamara, 1937. For maps and charts which have originated within the office, the system of classification followed has been based upon the project program. The number of maps and charts prepared under each phase of the program is as follows:

Land . . . . .	417
Water . . . . .	125
Power . . . . .	0
Industry and Social Conditions . . . . .	56
Recreation . . . . .	148
Transport . . . . .	5
Public Works . . . . .	7
Community Planning . . . . .	11
General and Miscellaneous . . . . .	7
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	776

A detailed classification and list are available at the office of the Board.

### PUBLICITY

Relations with the press have continued to be cordial and the work of the Board has been given generous recognition. Whenever warranted a special release on one or more phases of the Board's accomplishments has been issued, including:

- Survey of Employment Conditions
- Blackstone River Report
- Formation of State Council of Public Reservations
- Population Study
- Local Planning Boards' Activities in connection with Hurricane
- Conferences Sponsored in Cooperation with Massachusetts Federation of Planning Boards
- Report on Hurricane Damage in Massachusetts

In addition to the foregoing, a regular monthly release has been issued by the Industrial Division, giving the business index for Massachusetts.

A weekly release containing facts of general interest in Massachusetts has been issued under the caption "Do You Know Massachusetts?" In each of these releases items of particular interest to planners are included. These releases, appearing regularly in about fifty newspapers, have been found a very effective means of stimulating interest in the work of the Board.

As the Land Use maps for each town are completed, an analysis of conditions found in the town is issued to the papers in the municipality as well as to those in



contiguous towns. This is one method which the Board has adopted of informing persons most interested that these studies are available to them. It has proved itself a very worthwhile method.

### MISCELLANEOUS

The Board meets regularly twice a month, with special conferences and committee meetings at frequent intervals.

Funds appropriated during the year ending November 30, 1938 totaled \$44,000, divided into \$33,000 for personal services and \$11,000 for equipment and supplies, traveling, cooperation with the Federal Government in its assistance through the Works Progress Administration and other expenses. At the end of the year, there was an unexpended balance of \$2.76.

Financial statement verified  
Approved.

Geo. E. Murphy,  
*Comptroller*

In conclusion, the Board is glad to record its appreciation of the many courtesies received from public and private agencies and individuals. This includes His Excellency, the Governor, the members of the General Court and the State departments; also the National Resources Committee, the New England Regional Planning Commission, the Massachusetts Federation of Planning Boards, and the W.P.A. administrative offices and staff. To all of these, as well as to its own consultants and employees, to the press, to the local planning board members and to all others who have contributed in any way to the success of its efforts, the Board extends its most cordial thanks. With the assurance of their continued interest and cooperation, the Board looks forward with confidence to the service which it will be privileged to render in the future to the Commonwealth of Massachusetts and to its citizens.

Respectfully submitted,

### STATE PLANNING BOARD

By ELISABETH M. HERLIHY, *Chairman*

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VINCENT P. COYNE

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RICHARD K. HALE

*Department of Public Works*

PAUL J. JAKMAUH

*Commissioner of Public Health*

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*Commissioner of Conservation*



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